

REMARKS

Re-examination and reconsideration of the subject matter identified in caption pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow, are respectfully requested.

Claims 1, 3-52, 65-88 and 91-104 remain pending in this application. Claims 28-52 and 65-88 stand withdrawn from consideration on the merits.

Applicants acknowledge with appreciation the indication that claims 4, 6-8, 10, 15-18, 21-26 and 92 are allowed.

Claims 1, 3, 13, 19, 20, 95 and 97-103 were rejected under 35 U.S.C. §102(b) as anticipated by JP 5-112684 to Ogasahara et al for the reasons set forth on pages 2-3 of the Office Action. Also, claims 12, 91, 93, 94 and 96 were rejected under 35 U.S.C. §103(a) as obvious over JP '684 for the reasons given on page 3 of the Office Action. Reconsideration of these rejections is requested for at least the following reasons.

JP '684 discloses a silyl group-containing olefin type copolymer obtained by copolymerizing at least two types of mono-olefin monomers, a non-conjugated diene, and a silyl group-containing norbornene compound represented by formula (I), and reacting the resultant copolymer with a compound represented by formula (III) and/or (IV). The silyl group-containing norbornene compound has only one C=C double bond in the molecule. Also, the olefin monomers have only one C=C double bond in the molecule. Therefore, in the copolymers of JP '684, only the non-conjugated diene is a monomer capable of having a branched structure.

In the present invention, the silyl-containing copolymer rubber (A1) is obtained by random-copolymerizing ethylene, an α -olefin and a non-conjugated polyene represented by formula (I) or (II) having at least one specific terminal vinyl group, and then conducting a

hydrosilylation. The non-conjugated polyene represented by formula (I) or (II) has at least two C=C double bonds, which are capable of reaction in a polymerization.

Accordingly, in the present invention, an ethylene/ α -olefin/non-conjugated polyene random copolymer having a branched structure formed on the non-conjugated polyene represented by formula (I) or (II), is obtained by copolymerization. Then, the silyl-containing ethylene/ α -olefin/non-conjugated polyene random copolymer rubber (A1) having the branched structure is prepared by hydrosilylation, whereby a silicon compound represented by formula (IV) is added to the remaining C=C double bond of the copolymer. Therefore, in the copolymer rubber (A1) of the invention, the terminal groups of the norbornene compound may have a branched structure or a structure to which a silyl group is bonded. Also, the silyl group may be bonded to the vinyl group at the terminal of the norbornene compound or to the C=C double bond in the norbornene ring (*see* page 110, lines 2-23, of the specification).

On the other hand, JP '684 does not disclose or suggest using a norbornene compound having a terminal vinyl group as a non-conjugated diene. The copolymer of JP '684 does not have a branched structure in the terminal portion of the norbornene compound and a silyl group at a position other than the terminal portion of the norbornene compound. Accordingly, the silyl-containing copolymer rubber (A1) of the invention is clearly different from the silyl group-containing olefin type copolymer of JP '684.

In addition, in JP '684, after copolymerizing at least two types of mono-olefin type monomers, a non-conjugated diene, and a silyl group-containing norbornene compound, the resultant copolymer is reacted with a compound represented by formula (III) and/or (IV), i.e., the copolymer is modified with the compound (III) and/or (IV). The compound (III) and/or (IV) is added in excess to not only terminate the polymerization reaction but also to react with the silyl groups introduced in the copolymer; note page 11, paragraph [0012] of the

translated document. It is well known to a person skilled in the art that this reaction is conducted in order to prevent the remaining unreacted silyl group from exerting a harmful influence on a rubber composition (*see* paragraph [0003] of the translated document).

On the other hand, Applicants' copolymer (A1) is never reacted with a compound corresponding to the compound (III) and/or (IV).

Accordingly, since the silyl-containing copolymer rubber (A1) of the invention is clearly different from the silyl group-containing olefin type copolymer of JP '684, the presently claimed invention is patentable thereover.

For at least the aforementioned reasons, the §§102(b) and 103(a) rejections based on JP '684 should be reconsidered and withdrawn and such action is earnestly requested.

Claims 5 and 9 were rejected under 35 U.S.C. §103(a) as obvious over JP '684 in view of U.S. Patent No. 5,821,290 (Labauze) for the reasons set forth on page 4 of the Office Action. Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over JP '684 in view of U.S. Patent No. 6,329,460 (Ishikawa et al) for the reasons given on page 4 of the Official Action. Claim 14 was rejected under 35 U.S.C. §103(a) as obvious over JP '684 in view of U.S. Patent No. 6,525,110 (Yatsuyanagi et al) for the reasons given on page 5 of the Office Action. Reconsideration of these rejections is requested for at least the following reasons.

Neither Labauze '290 nor Ishikawa et al '460 nor Yatsuyanagi et al '110 disclose or suggest the use of a norbornene compound having a terminal vinyl group as a comonomer. Thus, even if the invention disclosed in JP '684 was modified in accordance with the disclosures of these documents, the resultant compositions would not render obvious the presently claimed invention. Therefore, the present invention is patentable over JP '684 in

view of Labauze '290, Ishikawa et al '460 or Yatsuyanagi et al '110, and the §103(a) rejections based on these documents should be withdrawn.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (703) 838-6683 at his earliest convenience.

Respectfully submitted,

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from Burns, Doane, Swecker & Mathis)

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